and the facility vapor connection must not exceed 18 meters (59.1 feet) and the vapor piping between the detonation arrester and the facility vapor connection must be protected from any potential internal or external ignition source; and

(2) Have an inerting, enriching, or diluting system that meets the requirements of 33 CFR 154.2107.

(c) A VCS with multiple facility vapor connections that processes vapor with a vapor recovery unit must have a detonation arrester located as close as practicable to each facility vapor connection. The total pipe length between the detonation arrester and each facility vapor connection must not exceed 18 meters (59.1 feet) and the vapor piping between the detonation arrester and the facility vapor connection must be protected from any potential internal or external ignition source.

(d) A VCS with multiple facility vapor connections that processes vapor with a vapor destruction unit must—

(1) Have a detonation arrester located as close as practicable to each facility vapor connection. The total pipe length between the detonation arrester and each facility vapor connection must not exceed 18 meters (59.1 feet) and the vapor piping between the detonation arrester and the facility vapor connection must be protected from any potential internal or external ignition source; and

(2) Have an inerting, enriching, or diluting system that meets the requirements of 33 CFR 154.2107.

(e) 33 CFR 154.2105(j) applies to a TBCF's VCS.

TANK BARGE CLEANING FACILITIES—OPERATIONS

§ 154.2250 General requirements.

(a) No tank barge cleaning operation using a vapor control system (VCS) may be conducted unless the facility operator has a copy of the facility operations manual, with the VCS addendum, marked by the local Coast Guard Captain of the Port (COTP) as required by 33 CFR 154.325(d).

(b) The facility person in charge must ensure that a facility can receive vapors only from a barge with a VCS that has been approved by the Coast Guard Marine Safety Center as meeting the requirements of 46 CFR 39.6000.

(c) The facility person in charge must ensure that safety system tests are conducted as follows:

(1) Pressure sensors, alarms, and automatic shutdown systems required by 33 CFR 154.2203, except as exempted by paragraph (c)(2) or as specified by paragraph (c)(3) of this section, must be tested by applying altering test pressures at the sensors not more than 24 hours before each cleaning operation;

(2) The pressure sensors required by 33 CFR 154.2203 may meet the test program in accordance with 33 CFR 154.2180 and 33 CFR 154.2181 instead of the test within 24 hours before each cleaning operation as required by paragraph (c)(1) of this section;

(3) Visible and audible alarm indicators must be tested not more than 24 hours before each cleaning operation;

(4) The analyzers, except for flammability analyzers, required by 33 CFR 154.2105(j) and 154.2107, except as exempted by paragraph (c)(5) of this section, must be checked for calibration response by use of a zero gas and a span gas not more than 24 hours before each cleaning operation;

(5) The analyzers required by 33 CFR 154.2105(j) and 154.2107 may be checked for calibration response by use of a zero gas and a span gas as defined by the test program contained in 33 CFR 154.2180 and 33 CFR 154.2181, and comply with the minimum requirements as defined in 33 CFR 154.2180 and 33 CFR 154.2181, instead of as provided by paragraph (c)(4) of this section; and

(6) The vacuum and pressure relief valves required by 33 CFR 154.2203 must be manually checked per manufacturers' instructions to verify that the valves unseat easily and then reset to the closed position without constraint. Any required flame screens or flame arresters must also be visually checked to ensure that they are not damaged.

(d) The facility person in charge must verify the following before beginning cleaning operations:

(1) Each valve in the vapor collection system between the barge's cargo tank and the facility vapor collection system is correctly positioned to allow the collection of vapors;

(2) A vapor collection hose or arm is connected to the barge's vapor collection system;

(3) The electrical insulating devices required by 33 CFR 154.2101(g) and 154.2203(m) are installed;

(4) The maximum allowable gas-freeing rate as determined by the lesser of the following:

(i) A gas-freeing rate corresponding to the maximum vapor processing rate for the tank barge cleaning facility's (TBCF's) VCS, as specified in the facility operations manual; or

(ii) The barge's maximum gas-freeing rate determined in accordance with 46 CFR 39.6007(c);

(5) The gas-freeing rate will not exceed the maximum allowable gas-freeing rate as determined in paragraph (d)(4) of this section;

(6) The maximum allowable stripping rate is determined and does not exceed the volumetric capacity of the barge's vacuum relief valve at the valve's setpoint for the cargo tank being stripped;

(7) The barge's maximum and minimum operating pressures;

(8) Each vapor collection hose has no unrepaired or loose covers, kinks, bulges, soft spots, or any other defects that would permit the discharge of vapor through the hose material; and no external gouges, cuts, or slashes that penetrate the first layer of hose reinforcement;

(9) The freezing point of each cargo. If there is a possibility that the ambient air temperature during cleaning operations will be at or below the freezing point of the cargo, adequate precautions have been taken to prevent freezing of vapor or condensate, or to detect and remove the frozen liquid and condensate to prevent accumulation; and

(10) The cargo vapor is evaluated for the potential to polymerize, and adequate precautions have been taken to prevent and detect polymerization of the cargo vapors.

(e) VCS equipment and instrumentation must be tested in compliance with 33 CFR 156.170(g) or (i), with the COTP or designated representative invited to observe these tests. The test procedure and a checklist must be approved by the certifying entity during the initial certification of the system and incorporated into the facility operations manual.

(f) If one or more analyzers required by 33 CFR 154.2107(d) or (e) become inoperable during gas-freeing operations, the operation may continue, provided that at least one analyzer remains operational; however, no further gas-freeing operations may be started until all inoperable analyzers are repaired or replaced.

(g) Whenever a condition results in a shutdown of the VCS, the cleaning operations must be immediately terminated. The operation may not resume until the cause of the shutdown has been investigated and corrective action taken.

(h) If it is suspected that a flare in the VCS has had a flashback, or if a flame is detected on a detonation arrester required by 33 CFR 154.2109(c)(2), the cleaning operation must be stopped and may not resume until the detonation arrester and any quick-closing stop valves downstream of the detonation arrester have been inspected and found to be in satisfactory condition.

(i) If a vacuum displacement system is used for gas-freeing, the facility person in charge of the cleaning operation must verify the following items:

(1) The minimum amount of open area for air flow on the barge has been determined so that the pressure in the cargo tank cannot be less than 14.5 pounds per square inch absolute (psia) (−0.2 pounds per square inch gauge (psig)) at the maximum flow capacity of the vapor-moving device;

(2) Any hatch or fitting providing the minimum open area has been secured open so that accidental closure is not possible; and

(3) The hatch and/or fitting must be opened before the pressure in the cargo tank falls below 10 percent of the highest setting of any of the barge's vacuum relief valves.

(j) 33 CFR 154.2150(p) and (q) apply to a TBCF's VCS.

APPENDIX A TO PART 154—GUIDELINES FOR DETONATION FLAME ARRESTERS

This appendix contains the draft ASTM standard for detonation flame arresters. Devices meeting this standard will be accepted by the Commandant (CG–522).

1. *Scope*